

ABSTRACT OF THE DISCLOSURE

A sample chamber is formed by a housing sealed against a microscope slide. The housing has fluid ports, including a well formed over at least one port. In a rinse station, rinse solution is drawn from a reservoir through the chamber to a waste reservoir. At a fill station, an aliquot of reagent already placed in the well is driven into the chamber. The reagent may be driven into the chamber by first drawing a vacuum on the chamber through the aliquot of reagent and then releasing the reagent to be drawn into the chamber by the vacuum.